It is claimed:

1. A sustained-release pharmaceutical formulation, comprising a melt-extruded blend of a therapeutically active agent, one or more hydrophobic materials selected from the group consisting of alkylcelluloses, acrylic and methacrylic acid polymers and copolymers, shellac, zein, hydrogenated castor oil, hydrogenated vegetable oil, and mixtures thereof; and one or more hydrophobic fusible carriers which provide a further retardant effect and selected from the group consisting of natural or synthetic waxes, fatty acids, fatty alcohols, and mixtures thereof, said hydrophobic fusible carrier having a melting point from 30 to 200°C, said melt-extruded blend divided into a unit dose containing an effective amount of said therapeutically active agent to render a desired therapeutic effect and providing a sustained-release of said therapeutically active agent for a time period of from about 8 to about 24 hours.

2. The formulation of claim 1, wherein said extrudate comprises a strand-shaped matrix cut into multi-particulates having a length of from about 0.1 to about 5 mm in length.

3. The formulation of claim 1, wherein said extrudate has a diameter of from about 0.1 to about 5 mm.

4. The formulation of claim 1, wherein said therapeutically active agent is an opioid analgesic.

5. The formulation of claim 4, wherein said opioid analgesic is selected from the group consisting of alfentanil, allylprodine, alphaprodine, anileridine, benzylmorphine, bezitramide, buprenorphine, butorphanol, clonitazene, codeine, cyclazocine, desomorphine, dextromoramide, dezocine, diampromide, dihydrocodeine, dihydromorphine, dimenoxadol, dimepheptanol, dimethylthiambutene, dioxaphetyl butyrate, dipipanone, eptazocine, ethoheptazine, ethylmethylthiambutene,

ethylmorphine, etonitazene, fentanyl, heroin, hydrocodone, hydromorphone, hydroxypethidine, isomethadone, ketobemidone, levallorphan, levorphanol, levophenacyl morphan, lofentanil, meperidine, meptazinol, metazocine, methadone, metopon, morphine, myrophine, nalbuphine, narceine, nicomorphine, norlevorphanol, normethadone, nalorphine, normorphine, norpipanone, opium, oxycodone, oxymorphone, papaveretum, pentazocine, phenadoxone, phenomorphan, phenazocine, phenoperidine, piminodine, piritramide, propheptazine, promedol, properidine, propiram, propoxyphene, sufentanil, tramadol, tilidine, salts thereof and mixtures thereof.

6. The extrudate of claim 1, wherein said opioid analgesic is selected from the group consisting of morphine, codeine, hydromorphone, hydrocodone, oxycodone, oxymorphone, dihydrocodeine, dihydromorphine, tramadol and mixtures thereof.

7. The formulation of claim 2, wherein a unit dose comprising an effective amount of said multiparticulates to render a therapeutic effect is contained within a gelatin capsule.

8. The formulation of claim 2, wherein a unit dose comprising an effective amount of said multiparticulates to render a therapeutic effect is compressed into a tablet.

9. The formulation of claim 8, wherein said therapeutically active agent is tramadol.

10. The formulation of claim 7 wherein said therapeutically active agent is an opioid analgesic selected from the group consisting of morphine, codeine, hydromorphone, hydrocodone, oxycodone, oxymorphone, dihydrocodeine, dihydromorphine, tramadol and mixtures thereof.

11. The formulation of claim 10, which provides an in-vitro release (when assessed by the USP Paddle or Basket Method at 100 prm at 900 ml aqueous buffer (pH between 1.6 and 7.2) at 37°C from about 1 to about 42.5% opioid released after one hour, from about 5 to about 65% opioid released after 2 hours, from about 15 to about 85% opioid released after 4 hours, from about 20 to about 90% opioid released after 6 hours, from about 35 to about 95% opioid released after 12 hours, from about 45 to about 100% opioid released after 18 hours, and from about 55 to about 100% opioid released after 24 hours, by weight.

12. The formulation of claim 10, which provides a peak plasma level at from about 2 to about 8 hours after oral administration, and preferably from about 4 to about 6 hours after administration.

13. The formulation of claim 10, which provides a W_{50} from about 4 to about 12 hours.

14. The formulation of claim 10, which provides a rapid rate of initial rise in the plasma concentration of the opioid after oral administration, such that the peak plasma level obtained in-vivo occurs from about 2 to about 8 hours after oral administration.

15. The formulation of claim 10, which provides a rapid rate of initial rise in the plasma concentration of the opioid after oral administration, such that the absorption half-life is from about 1 to about 8 hours after oral administration (in the fasted state).

16. The formulation of claim 10, which provides an in-vitro release (when assessed by the USP Paddle or Basket Method at 100 prm at 900 ml aqueous buffer (pH between 1.6 and 7.2) at 37°C from about 12.5 to about 42.5% opioid released after one hour, from about 25 to about 65% opioid released after 2 hours, from about

45 to about 85% opioid released after 4 hours, and greater than about 60% opioid released after 8 hours, by weight.

17. The formulation of claim 1, wherein said extruded blend is substantially non-porous.

18. A method of preparing a sustained-release pharmaceutical extrudate suitable for oral administration, comprising:

blending a therapeutically active agent together with (1) a hydrophobic material selected from the group consisting of alkylcelluloses, acrylic and methacrylic acid polymers and copolymers, shellac, zein, hydrogenated castor oil, hydrogenated vegetable oil, and mixtures thereof and (2) a hydrophobic fusible carrier selected from the group consisting of natural or synthetic waxes, fatty acids, fatty alcohols, and mixtures thereof, said retardant material having a melting point between 30-200°C and being included in an amount sufficient to further slow the release of the therapeutically active agent,

heating said blend to a temperature sufficient to soften the mixture sufficiently to extrude the same;

extruding said heated mixture as a strand having a diameter of from 0.1 - 3 mm;

cooling said strand; and

dividing said strand to form non-spheroidal multi-particulates of said extrudate having a length from 0.1 - 5 mm; and

dividing said non-spheroidal multi-particulates into unit doses containing an effective amount of said therapeutically active agent,said unit dose providing a sustained-release of said therapeutically active agent for a time period of from about 8 to about 24 hours.

19. The method of claim 18, wherein said therapeutically active agent is an opioid analgesic is selected from the group consisting of alfentanil, allylprodine,

alphaprodine, anileridine, benzylmorphine, bezitramide, buprenorphine, butorphanol, clonitazene, codeine, cyclazocine, desomorphine, dextromoramide, dezocine, diampromide, dihydrocodeine, dihydromorphine, dimenoxadol, dimepheptanol, dimethylthiambutene, dioxaphetyl butyrate, dipipanone, eptazocine, etheptazine, ethylmethylthiambutene, ethylmorphine, etonitazene, fentanyl, heroin, hydrocodone, hydromorphone, hydroxypethidine, isomethadone, ketobemidone, levallorphan, levorphanol, levophenacyl morphan, lofentanil, meperidine, meptazinol, metazocine, methadone, metopon, morphine, myrophine, nalbuphine, narceine, nicomorphine, norlevorphanol, normethadone, nalorphine, normorphine, norpipanone, opium, oxycodone, oxymorphone, papaveretum, pentazocine, phenadoxone, phenomorphan, phenazocine, phenoperidine, piminodine, piritramide, propheptazine, promedol, properidine, propiram, propoxyphene, sufentanil, tramadol, tilidine, salts thereof and mixtures thereof.

20. The method of claim 18, further comprising containing said unit dose of said multiparticulates within a gelatin capsule.

21. The method of claim 18, further comprising compressing said unit dose of multi-particulates into a tablet.

22. The method of claim 18, further comprising extruding said heated mixture under vacuum conditions to provide a substantially non-porous extrudate.

23. A sustained-release pharmaceutical formulation, comprising a melt-extruded blend of an opioid analgesic and one or more hydrophobic materials selected from the group consisting of alkylcelluloses, acrylic and methacrylic acid polymers and copolymers, shellac, zein, hydrogenated castor oil, hydrogenated vegetable oil, and mixtures thereof; said melt-extruded blend divided into a unit dose containing an effective amount of said therapeutically active agent to render a desired therapeutic

effect and providing a sustained-release of said therapeutically active agent for a time period of from about 8 to about 24 hours.

24. The extrudate of claim 23, wherein said opioid analgesic is selected from the group consisting of morphine, codeine, hydromorphone, hydrocodone, oxycodone, oxymorphone, dihydrocodeine, dihydromorphine, tramadol and mixtures thereof.